

REMARKS

Claims 1, 11, 17, 20, 22, 29, 35, and 41 have been amended. Specifically, claim 1 has been amended to include the features of original claim 6. Claim 11 has been amended to include the features of original claim 16. Claim 17 has been amended to clarify the dependency from amended claim 11. Claim 20 has been amended to include the features of original claim 28. Claim 22 has been amended to correct an informality. Claim 29 was amended to include the features of original claim 34. Claim 35 has been amended to clarify the dependency from claim 29. Claim 41 has been amended to include a feature that appeared in many original dependent claims. No new matter has been added.

Claims 42-59 have been added. Specifically, independent claim 42 includes all of the features of original claim 7. Independent claim 48 includes all of the features of original claim 8. Independent claim 54 includes all of the features of original claim 10. Dependent claims 43-47, 49-53, and 55-59 include features of many of the original dependent claims. No new matter has been added.

Claims 6-8, 15, 16, 28, 34, and 38-40 have been cancelled without disclaimer of the subject matter contained therein or prejudice to Applicants' right to file any continuations directed thereto. Upon entry of this Amendment, claims 1-5, 9-14, 17-27, 29-33, 35-37, and 41-59 are pending.

In the Office Action dated June 14, 2005, claim 1 was rejected under 35 U.S.C. §102(b) as being anticipated by Riordan et al. (U.S. Patent No. 4,837,794). Applicants respectfully traverse this rejection.

Claim 1 recites a lithographic apparatus that includes, *inter alia*, "a debris-mitigation system that mitigates debris particles which are formed during use of at least a part of the lithographic apparatus, wherein the debris-mitigation system is arranged to apply a magnetic field so that at least charged debris particles are mitigated, and wherein the debris-mitigation system is further arranged to switch the magnetic field alternatingly on and off." Riordan et al. does not disclose or suggest all of the features of claim 1.

Riordan et al. discloses a filter apparatus for use in x-ray equipment. (Riordan et al. at Abstract.) A magnet system (38) is used for creating a magnetic field to deflect charged particles. (Riordan et al. at col. 2, lns. 66-68.) As described by Riordan et al., "[t]he magnet system 38 preferably includes a plurality of permanent magnets 66 spaced about the x-ray path..." (Riordan et al. at col. 4, lns. 26-28.) Riordan et al. does not disclose or suggest that

these permanent magnets may be “arranged to switch the magnetic field alternatingly on and off,” as recited by claim 1.

Accordingly, Applicants respectfully submit that claim 1 is patentable over Riordan et al. and respectfully request that the rejection to claim 1 be withdrawn.

In the Office Action, claims 1-41 were rejected under 35 U.S.C. §102(e) as being anticipated by Ruzic et al. (U.S. 2005/0016679). Applicants respectfully traverse this rejection.

Ruzic et al. discloses a plasma source for an EUV chamber that may be used to generate a secondary plasma (220). (Ruzic et al. at [0014].) The plasma source may be a coil (225) with a radio frequency (RF) power supply (150) that supplies power to the coil. (Ruzic et al. at [0014].) In one embodiment, “the coil 225 may be operated at an overall DC bias to produce an axial magnetic field.” (Ruzic et al. at [0018].)

Claim 1 is discussed above. Ruzic et al. does not disclose or suggest a lithographic apparatus that includes a debris-mitigation system that is arranged to switch the magnetic field alternatingly on and off, as recited by claim 1. Accordingly, Applicants respectfully submit that claim 1 and claims 2-5, 9, and 10 that depend therefrom are patentable over Ruzic et al., and respectfully request that the rejection to claims 1-5, 9, and 10 be withdrawn.

Claim 11 recites a debris-mitigation system for mitigating debris particles within a lithographic apparatus. The debris-mitigation system is arranged to apply a magnetic field and to apply a gradient to the magnetic field. Ruzic et al. is discussed above. Ruzic et al. does not disclose or suggest a debris-mitigation system that is arranged to apply a gradient to the magnetic field, as recited by claim 11. Accordingly, Applicants respectfully submit that claim 11 and claims 12-14, and 17-19 that depend therefrom are patentable over Ruzic et al., and respectfully request that the rejection to claims 11-14, and 17-19 be withdrawn.

Claim 20 recites a source for producing EUV radiation that includes a debris-mitigation system. The debris-mitigation system is arranged to apply a magnetic field so that at least charged debris particles are mitigated. As recited by claim 20, “the debris mitigation system is further arranged to induce, in use, within a group of the debris particles an electric current such that at least charged debris particles of that group deflect under influence of a force which has a direction perpendicular to a component of the magnetic field and perpendicular to a component of the electric current induced.” Ruzic et al. is discussed above. Ruzic et al. does not disclose a source for producing EUV that includes a debris mitigation system that is arranged to induce within a group of debris particles an electric

current such that at least charged debris particles of that group deflect under influence of a force which has a direction perpendicular to a component of the magnetic field and perpendicular to a component of the electric current induced, as recited by claim 20. Accordingly, Applicants respectfully submit that claim 20 and claims 21-27 are patentable over Ruzic et al. and respectfully request that the rejection to claims 20-27 be withdrawn.

Claim 29 recites a method for mitigating debris as produced during use of at least a part of a lithographic apparatus. The method includes “applying a magnetic field so that at least charged debris particles are mitigated; and applying a gradient to the magnetic field.” Ruzic et al. is discussed above. Ruzic et al. does not disclose or suggest a method for mitigating debris that includes applying a gradient to the magnetic field, as recited by claim 29. Accordingly, Applicants respectfully submit that claim 29 and claims 30-33, and 35-37 that depend therefrom are patentable over Ruzic et al., and respectfully request that the rejection to claims 29-33, and 35-37 be withdrawn.

Claim 41 recites a lithographic method that includes, *inter alia*, “generating a magnetic field to interact with said charged debris particles; and applying a gradient to the magnetic field.” Ruzic et al. is discussed above. Ruzic et al. does not disclose or suggest a lithographic method that includes applying a gradient to the magnetic field, as recited by claim 41. Accordingly, Applicants respectfully submit that claim 1 is patentable over Ruzic et al. and respectfully request that the rejection to claim 41 be withdrawn.

New independent claim 42 recites a lithographic apparatus that includes, *inter alia*, a debris-mitigation system that mitigates debris particles which are formed during use of at least a part of the lithographic apparatus. As recited by claim 42, “the debris-mitigation system is further arranged to apply a gradient to the magnetic field.” Riordan et al. and Ruzic et al. are discussed above. Neither Riordan et al. nor Ruzic et al. disclose or suggest lithographic apparatus that includes a debris-mitigation system that is arranged to apply a gradient to the magnetic field, as recited by claim 48. Accordingly, Applicants respectfully submit that claim 42 and claims 43-47 that depend therefrom are patentable over Riordan et al. and Ruzic et al.

New independent claim 48 recites a lithographic apparatus that includes, *inter alia*, a debris-mitigation system that mitigates debris particles which are formed during use of at least a part of the lithographic apparatus. As recited by claim 48, “the debris-mitigation system is further arranged to apply the magnetic field dynamically with a predetermined frequency.” Neither Riordan et al. nor Ruzic et al. disclose or suggest lithographic apparatus

that includes a debris-mitigation system that is arranged to apply the magnetic field dynamically with a predetermined frequency, as recited by claim 48. Accordingly, Applicants respectfully submit that claim 48 and claims 49-53 that depend therefrom are patentable over Riordan et al. and Ruzic et al.

New independent claim 54 recites a lithographic apparatus that includes, *inter alia*, a debris-mitigation system that mitigates debris particles which are formed during use of at least a part of the lithographic apparatus. As recited by claim 54, “the debris mitigation system is further arranged to induce, in use, within a group of the debris particles an electric current such that at least charged debris particles of that group deflect under influence of a force which has a direction perpendicular to a component of the magnetic field and perpendicular to a component of the electric current induced.” Neither Riordan et al. nor Ruzic et al. disclose or suggest lithographic apparatus that includes a debris-mitigation system that is arranged to induce, in use, within a group of the debris particles an electric current such that at least charged debris particles of that group deflect under influence of a force which has a direction perpendicular to a component of the magnetic field and perpendicular to a component of the electric current induced, as recited by claim 54. Accordingly, Applicants respectfully submit that claim 54 and claims 55-59 that depend therefrom are patentable over Riordan et al. and Ruzic et al.

All rejections having been addressed, it is respectfully submitted that the present application is in a condition for allowance and a Notice to that effect is earnestly solicited. If any point remains at issue which the Examiner feels may best be resolved through a personal or telephone interview, please contact the undersigned at the telephone number below.

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Please charge any fees associated with the submission of this paper to Deposit Account Number 033975. The Commissioner for Patents is also authorized to credit any over payments to the above-referenced Deposit Account.

Respectfully submitted,

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